

CLAIMS:

1. An antenna branch selector for selecting for processing at least one of a plurality of antenna branches each coupled to a respective receive antenna and carrying a received signal, said antenna branch selector comprising:

a signal selector having a plurality of inputs to receive signals from said plurality of antenna branches and having an output to output a selected signal for processing;

a time-to-frequency domain converter configured to receive a time domain signal from each of said antenna branches and to provide a corresponding frequency domain output signal; and

a controller coupled to said time-to-frequency domain converter and to said signal selector to control said signal selector to select a said antenna branch responsive to said frequency domain output signal.

2. An antenna branch selector as claimed in claim 1 wherein said controller is configured to select a said antenna branch responsive to a difference between a signal level at a first frequency and a signal level at a second frequency in a said frequency domain output signal for an antenna branch.

3. An antenna branch selector as claimed in claim 2 wherein said first and second frequencies comprise frequencies of said received signal.

4. An antenna branch selector as claimed in claim 3 wherein a said received signal has, in the frequency domain, at least two tones, and wherein said first and second frequencies comprise frequencies of said tones.

5. An antenna branch selector as claimed in claim 4 wherein said received signal comprises a packet data signal including a preamble signal portion, and wherein said tones comprise tones of said preamble signal portion.

6. An antenna branch selector as claimed in claim 5 wherein said received signal comprises a Bluetooth compatible signal.
7. An antenna branch selector as claimed in claim 2 wherein said controller is configured to select a said antenna branch responsive to a comparison of said difference in signal level for one said antenna branch with said difference in signal level for another said antenna branch.
8. An antenna branch selector as claimed in claim 3 wherein said controller is further configured to determine an indication of received power for a said antenna branch, and wherein said controller is further configured to select a said antenna branch responsive to said received power indication.
9. An antenna branch selector as claimed in claim 3 wherein said controller is further configured to select a said antenna branch responsive to a difference between signal levels in said frequency domain signal for an antenna branch at a third frequency comprising a frequency of said received signal and at a fourth frequency comprising a frequency at which substantially no signal level from said received signal is expected.
10. An antenna branch selector as claimed in claim 8 wherein said controller is responsive to a sum of signal levels at a plurality of said third frequencies.
11. An antenna branch selector as claimed in claim 1 wherein said received signal comprises a packet data signal including a payload signal portion, and wherein said controller is further configured to control said signal selector during said payload signal portion.
12. An antenna branch selector as claimed in claim 11 wherein said controlling of said signal selector during said payload signal portion is conditional upon a Doppler frequency shift of said received signal being greater than a threshold value.
13. A receiver including the antenna branch selector of claim 1.

14. Processor control code to, when running implement the antenna branch selector of claim 1.

15. A method of selecting a received signal from an antenna of antenna system comprising a plurality of antennas, the method comprising:

transforming a received signal from each said antenna from the time domain to the frequency domain;

determining a measure of multipath fading for the signal from each said antenna from said frequency domain transformed signal; and

selecting a received signal responsive to a said determined measure of multipath fading.

16. A method as claimed in claim 15 wherein said determining comprises comparing levels of said received signal at two or more frequencies.

17. A method as claimed in claim 16 wherein said received signal comprises a packet data signal including a preamble portion and wherein said determining is performed during said preamble signal.

18. A method as claimed in claim 17 wherein said two frequencies comprise tones of said preamble signal.

19. A method as claimed in claim 15 further comprising determining a measure of received signal strength, for the signal from each said antenna from said frequency domain transformed signal, and wherein said selecting is further responsive to a said determined measure of received signal strength.

20. A method as claimed in claim 15 further comprising determining a measure of received signal to noise and/or interference ratio, for the signal from each said antenna from said frequency domain transformed signal and wherein said selecting is further

responsive to said determined measure of received signal to noise and/or interference ration.

21. A method as claimed in claim 17 wherein said packet data signal includes a payload portion and further comprising monitoring a received signal indicator during reception of said payload portion and selecting a received signal responsive to said monitoring.

22. A method as claimed in claim 21 further comprising monitoring a received signal frequency change parameter, and wherein said selecting of a received signal responsive to said monitoring is responsive to said frequency change parameter.

23. A system for selecting a received signal from an antenna of an antenna system comprising a plurality of antennas, said received signal comprising a packet data signal including preamble and payload signal portions, the system comprising:

means for a received signal parameter measured during said preamble signal;

means for determining a Doppler frequency change of said received signal; and

means for reselecting said received signal during said payload signal conditional upon said determined frequency change being greater than a threshold frequency change.

24. A method of selecting a received signal from an antenna of an antenna system comprising a plurality of antennas; said received signal comprising a packet data signal including preamble and payload signal portions, the method comprising:

a received signal parameter measured during said preamble signal;

determining a Doppler frequency change of said received signal; and

means for reselecting said received signal during said payload signal conditional upon said determined frequency change being greater than a threshold frequency change.

25. A method as claimed in claim 24 wherein said threshold frequency change is dependent upon the duration of a said packet.